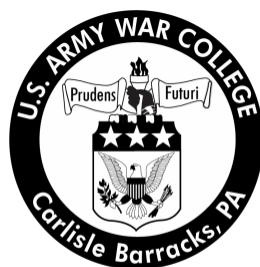


U.S.-Russian Arms Control: A New Paradigm

by

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United States Army War College
Class of 2012

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REPORT DOCUMENTATION PAGE			<i>Form Approved</i> <i>OMB No. 0704-0188</i>	
<small>Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.</small>				
1. REPORT DATE (DD-MM-YYYY) 024-02-2012		2. REPORT TYPE Strategy Research Project		3. DATES COVERED (From - To)
4. TITLE AND SUBTITLE U.S.-Russian Arms Control: A New Paradigm		5a. CONTRACT NUMBER		
		5b. GRANT NUMBER		
		5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S) Colonel Andrew M. Berrier, USA		5d. PROJECT NUMBER		
		5e. TASK NUMBER		
		5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Dr. Stephen Blank Strategic Studies Institute		8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army War College 122 Forbes Avenue Carlisle, PA 17013		10. SPONSOR/MONITOR'S ACRONYM(S)		
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION / AVAILABILITY STATEMENT Distribution: A				
13. SUPPLEMENTARY NOTES				
14. ABSTRACT The U.S. and Russia concluded the New Strategic Arms Reduction Treaty (NST) in April 2010. The Obama Administration sees the treaty as a key step in its campaign to reduce the proliferation of nuclear weapons and material worldwide, and the administration clearly wants another arms control agreement with Russia to lend more support to that effort. However, conclusion of another bilateral agreement could prove problematic. The U.S. and Russia have several major differences in strategic outlook, doctrine, and weapons development that will get in the way. The U.S., for example, believes that terrorists groups and rouge states armed with nuclear weapons pose a far bigger threat to security than Russia's nuclear arsenal does. Its doctrine and weapons development focuses on non-proliferation and missile defense. Russia still views the U.S., NATO, and China as major threats and relies on nuclear weapons to offset perceived imbalances in conventional capability. Instead of attempting to conclude another "traditional" bilateral arms control treaty, this paper argues the two sides would be better served focusing on other non-proliferation and threat reduction activities that better support the long-term security requirements of both countries.				
15. SUBJECT TERMS Nuclear Weapons, Treaties and Agreements, Missile Defense				
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES
a. REPORT UNCLASSIFIED	b. ABSTRACT UNCLASSIFIED	c. THIS PAGE UNCLASSIFIED	UNLIMITED	30
			19b. TELEPHONE NUMBER (include area code)	

USAWC STRATEGY RESEARCH PROJECT

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A NEW PARADIGM**

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ABSTRACT

AUTHOR: Colonel Andrew M. Berrier
TITLE: U.S.-Russian Arms Control: A New Paradigm
FORMAT: Strategy Research Project
DATE: 26 January 2012 WORD COUNT: 5974 PAGES: 30
KEY TERMS: Nuclear Weapons, Treaties and Agreements, Missile Defense
CLASSIFICATION: Unclassified

The U.S. and Russia concluded the New Strategic Arms Reduction Treaty (NST) in April 2010. The Obama Administration sees the treaty as a key step in its campaign to reduce the proliferation of nuclear weapons and material worldwide, and the administration clearly wants another arms control agreement with Russia to lend more support to that effort. However, conclusion of another bilateral agreement could prove problematic. The U.S. and Russia have several major differences in strategic outlook, doctrine, and weapons development that will get in the way. The U.S., for example, believes that terrorists groups and rouge states armed with nuclear weapons pose a far bigger threat to security than Russia's nuclear arsenal does. Its doctrine and weapons development focus on non-proliferation and missile defense. Russia still views the U.S., NATO, and China as major threats and relies on nuclear weapons to offset perceived imbalances in conventional capability. Instead of attempting to conclude another "traditional" bilateral arms control treaty, this paper argues the two sides would be better served focusing on other non-proliferation and threat reduction activities that better support the long-term security requirements of both countries.

U.S.-RUSSIAN ARMS CONTROL: THE NEED FOR A NEW PARADIGM

So today, I state clearly and with conviction America's conviction to seek the peace and security of a world without nuclear weapons. This goal will not be reached quickly- perhaps not even in my lifetime. It will take patience and persistence. But we, too, must ignore the voices who tell us that the world cannot change.

—President Barack Obama
Prague, Czech Republic, April 2009

On April 5th, 2010, President Barrack Obama made a speech in Prague in which he outlined his concerns about the dangers of nuclear weapons in the modern world.¹ The President argued that, while the threat of global nuclear war has decreased, the risk of nuclear attack has increased due to the illicit trade of nuclear materials and bomb making technology to rouge states and, potentially, to terrorist groups. As such, the President made “a world without nuclear weapons” an important long-term strategic objective for the United States. President Obama used much of the remainder of his speech to outline various ways his administration would utilize to advance this ambitious goal. Included in the list are new arms control and non-proliferation agreements with multiple countries, reduced reliance on nuclear weapons in U.S. strategic doctrine, a new program to assist countries secure nuclear materials that might be vulnerable to theft, and a strengthening of the international nuclear non-proliferation regime. Although not mentioned in the speech, the U.S. has also committed to developing non-nuclear military technologies that can replace nuclear weapons in deterring or eliminating threats and to working with allies to build regional, non-nuclear deterrent capabilities.

Gaining the Russian Federation's cooperation and "buy in" to the policy and initiatives is key to achieving the President's goal. Russia is a major nuclear power with extensive material, technical, and expert resources. More importantly, Russia has a massive nuclear arsenal and, since the Cold War, efforts to reduce the threat of nuclear war have dominated the U.S.-Russia relationship. As a result, the two countries have entered into several bilateral and multilateral arms control agreements and cooperated in global non-proliferation efforts. Many observers believe that arms control, threat reduction, and non-proliferation are the heart of the U.S.-Russia bilateral relationship even now, a decade after the end of the Cold War.

With this in mind, the Obama Administration has aggressively pursued a diplomatic "reset" in the U.S.-Russia relationship, a relationship that had cooled significantly since the Russian invasion of Georgia in August 2008. A major early part of that reset and a key intermediate objective for President Obama's overall goal of decreasing nuclear weapons was the conclusion of the New Strategic Arms Reduction Treaty (NST), an agreement designed to limit numbers of deployed strategic nuclear weapons and their delivery systems. Presidents Obama and Medvedev signed that new treaty in April 2010 and it entered into force in February 2011 after controversial deliberations in the U.S. Senate and Russian Duma.

The question now is "what next" with Russia? Opinions vary. President Obama stated NST would "set the stage for further cuts."² In its resolution supporting ratification, the U.S. Senate encouraged the Obama Administration to seek an agreement that includes tactical nuclear weapons which aren't currently covered by any treaty.³ A Council on Foreign Relations publication argues for another agreement

limiting both sides to 1000 operationally deployed strategic and tactical weapons.⁴ Still others argue that the U.S. and Russia need to begin reaching out to other nuclear weapons states to make current and future agreements multilateral.

Unfortunately a number of asymmetries in strategic outlook, nuclear doctrine, and plans for development of military capabilities will likely impede the conclusion of another “traditional” U.S.-Russia bilateral arms control agreement. Negotiation will prove long and arduous and ratification will prove difficult due to domestic opposition on both sides. In addition, for the American side, another traditional bilateral treaty would primarily serve a political purpose; it would do little to reduce the threat of terrorists and other rogue actors armed with nuclear weapons or other dangerous technologies. Another treaty also would do little to affect Pakistan, North Korea, China, or any other nuclear power in their strategic decision-making about nuclear forces and doctrine. Instead, both the U.S. and Russia would be better served extending other bilateral non-proliferation efforts and exploring further cooperation on other dangerous technologies.

Asymmetric Approaches

The NST replaces the expired 1991 START Treaty and only limits strategic nuclear weapons, those deliverable at ranges over 5500km.⁵ The treaty requires both sides to reduce their deployed strategic warheads to 1550 and deployed delivery systems to 700 by 2018, a thirty percent reduction over the limits in the 1991 agreement. The treaty specifically defines delivery systems as inter-continental ballistic missiles (ICBMs), submarine launched ballistic missiles (SLBM), and heavy bombers. Each side is also limited to 800 deployed and non-deployed launchers of ICBMs, SLBMs, and bombers by 2018. Finally, the treaty requires each side to exchange significant data on

the composition and deployment of their strategic nuclear forces on an annual basis and allows for a limited number of on-site inspections to verify the information.

The U.S. side wants additional arms control agreements with Russia and other nuclear states to advance President Obama's objective of ultimately ridding the world of nuclear weapons. Unfortunately a number of asymmetries in outlook, strategy, and military technology will likely impede the conclusion of any additional bilateral agreements that might reduce the size of U.S. and Russian arsenals. The asymmetries aren't new and are evident in pronouncements of senior leaders and in official strategic documents.

On the American side, U.S. strategic thinkers since the George W. Bush administration have generally agreed that the major threat facing the U.S. and the West is not the Russian nuclear arsenal or Russia itself, but nuclear weapons (and other weapons of mass destruction) in the hands of terrorists or "rogue" states such as Iran or North Korea. Non-proliferation and the development of defensive technologies have therefore become strong themes in U.S. national security publications for several years.

As his 2009 Prague speech notes, President Obama himself also holds this view and he's gone a step further; he made "nuclear zero" a guiding principle for his administration. The President's vision and the various ways and means to achieve it are included in both the National Security Strategy and National Military Strategy, but are best expressed in the 2010 Nuclear Posture Review Report (NPR).⁶ The NPR echoes the President's Prague speech stating that the threat of nuclear war with another major nuclear power is remote, but the threat of nuclear attack by terrorists and rouge states armed with nuclear weapons has increased. Preventing nuclear terrorism

and proliferation of materials, not deterring other nuclear powers, is thus the most critical U.S. nuclear objective. To help achieve that goal, the U.S. will lead international efforts to strengthen the global nuclear non-proliferation regime, initiate programs to help friendly countries secure vulnerable nuclear materials, and seek new formal bilateral and multilateral arms control and fissile material control treaties.

In terms of actual military forces, the NPR notes that the current U.S. nuclear arsenal is not well suited to address the threat of terrorism and rogue states. Instead, the NPR commits the U.S. to enhancing regional deterrence with allies through forward basing of conventional forces and development of new, non-nuclear military technologies like missile defense that are more appropriate to countering the threats the U.S. and its allies now face. To demonstrate the U.S. commitment to reducing the political importance of nuclear weapons and to encourage other nuclear powers to follow the U.S. lead, the NPR also reduces the array of circumstances in which American leadership might use nuclear weapons. For example, the NPR indicates that the U.S. will not use nuclear weapons against a non-nuclear state that is a party to and in compliance with the Nuclear Non-Proliferation Treaty (NPT). While these changes do not obviate the need for nuclear weapons in the short term, the NPR concludes they allow the U.S. to safely reduce the size of its nuclear arsenal and still maintain an effective deterrent force until the President's goal can be reached.

Russian leaders see nuclear weapons as far more critical due to a different geopolitical environment and its own conventional military weakness. Russian strategists continue to view themselves as surrounded with NATO to the West, Islamic fundamentalists to the South, and a rising China in the East. Russia's inability to keep

up with the development of missile defenses, precision guided strategic weapons and modern conventional capabilities as seen in both the West and in China increase the feeling of vulnerability. Because of these concerns, the Chief of the Russian General Staff noted that nuclear weapons have “special significance” in Russian strategic thinking and are even more critical to Russia’s security.⁷ This sentiment is officially enshrined in Russia’s 2010 *Military Doctrine*, the Russian version of the National Military Strategy. The doctrine highlights the threat posed by NATO (with implicit references to China) and says that Russia considers nuclear weapons an “important factor” in deterring nuclear attacks, large-scale conventional attacks, or regional war involving Russia or its allies.⁸ Russia also reserves the right to use its nuclear weapons in response to an attack on Russia or its allies involving WMD, or in response to a conventional attack “when the very existence of the state is under threat.”⁹

Doctor Jacob Kipp, a U.S. specialist on Russian military affairs, notes that a 2010 classified Russian government document leaked to the press gives more evidence of similar strategic thinking.¹⁰ The *Foundations of State Policy in the Area of Nuclear Deterrence to 2020* says that Russian commanders would likely resort to nuclear weapons in case of enemy *conventional attacks* (emphasis added) on vital economic or political structures, Russian nuclear weapons systems, or their command and control and early warning systems. Russian commanders might also use nuclear weapons in the case of extensive penetration of Russian territory by enemy ground forces if Russian conventional forces prove incapable of stopping them. Kipp says the first scenario describes how many Russian strategists believe a U.S./NATO attack using high precision conventional weapons and space capabilities might begin while the

second scenario outlines how these same thinkers envision a possible attack by Chinese forces in the Far East might occur.

As Daniel Goure notes, nuclear weapons also serve political purposes for Russia's leaders that are different from those in the U.S.¹¹ In short, nuclear weapons are one of the few military assets left following the collapse of the Soviet Union that make Russia a great power, and that status must be respected internationally. Not only do the weapons provide a deterrent to potential attack, they provide Russia a "seat at the table" and leverage for major international security discussions that Russian leaders feel their other instruments of power don't provide. With the U.S. in particular, nuclear weapons provide Russia a "special status" that must be respected. In many ways, President Obama's pursuit of a "reset" in relations with Russia and a new treaty as priorities for his administration validates this view. This difference in outlook will undoubtedly continue to complicate bilateral arms control negotiations in the near future.

The U.S. and Russia are also on different paths in terms of development of nuclear and non-nuclear military capabilities that will prevent easy identification of common ground in future arms control negotiations. Missile defense is the first issue of concern. The U.S. and NATO believe creation of a European missile defense system is of vital importance due to potential nuclear ballistic missile threats from rouge actors such as Iran and North Korea. The allies thus plan to deploy missile defense radars and interceptors in both Northern and Southern Europe in a "phased adaptive approach" between 2011 and 2018.¹² The system will initially rely on U.S. "Aegis" cruisers in the Mediterranean Sea with radars potentially in Turkey. But starting in

2015, the alliance will place similar “Aegis” radars and improved interceptors in Romania followed by a 2018 deployment of radars and interceptors to Poland.

Russia downplays the alliance assessment of an Iranian threat and argues that the US/NATO system as envisioned after 2018 will undermine Russia’s strategic nuclear deterrent capability because its interceptors could potentially destroy Russia’s ICBMs after launch before those ICBMs can release their warheads.¹³ Both the U.S. and NATO have gone to great lengths to reassure the Russian side that its deterrent force is not the target and even invited Russia to participate in a combined European system by integrating its radars and sensors into the NATO network.¹⁴ Russia initially agreed to participate in talks on a European system, but has insisted on a “semi-separate” sectoral missile defense system in which each side would defend its own air space with no sensor or interceptor overlap.¹⁵ Russia also insists on a “legally binding” guarantee that NATO will not deploy assets that could target Russian ICBMs.¹⁶ The U.S. and NATO reject both suggestions primarily because Russia has few modern defensive capabilities and cannot provide the kind of radar or interceptor coverage NATO intends to develop. The alliance leadership also obviously has concerns as to whether the Russians would ever dedicate resources to developing this capability given their threat assessment and strategic outlook.

As a result, missile defense talks have made little progress. In November 2011, Russian President Medvedev increased the rhetoric. In a “statement to the citizens of Russia,” he indicated strong disappointment that the U.S. and NATO are “unwilling to hear and understand our concerns.”¹⁷ While not calling the discussions on integration a complete failure, Medvedev directed his military forces to place missile defense forces

in Kaliningrad on combat alert, to equip new strategic missiles under development with advanced missile defense penetration systems and highly effective warheads, and to “deploy modern offensive weapons systems” to target U.S. missile defenses in Europe. He even directed the Russian military to find ways to disable missile defense and guidance systems, implying that computer network attack or other forms of information operations might be used. Finally, Medvedev repeated a threat to withdraw from the NST, a threat he’s made before. It’s difficult to see how a new arms control agreement can be concluded without resolution of this issue.

Another less well-known area of disagreement over future capabilities concerns “non-nuclear strategic weapons” such as the U.S. Prompt Global Strike (PGS). The U.S. also sees this as critical for dealing with the threats posed by the current strategic environment. Non-nuclear strategic weapons provide the capability to deliver powerful conventional warheads at very high speeds on an intercontinental basis. Using PGS, the U.S. could, for example, quickly destroy a North Korean missile on a launch pad or an Iranian nuclear site without the more devastating effects and political fallout of a nuclear detonation or the dangers inherent in a traditional air raid with manned bombers.¹⁸ Russian defense intellectuals are concerned that PGS would enable the U.S. to neutralize Russia’s strategic nuclear force before launch by destroying its command and control systems with targeted precision strikes. The Russian Military Doctrine specifically mentions deployment of such weapons (along with missile defenses) as a “main external danger” to the Russian Federation.¹⁹ One Russian analyst notes Russian President Medvedev and others see the need to account for PGS in future arms control negotiations.²⁰ While the U.S. did agree to include conventionally

armed strategic bombers, ICBMs, and SLBMs in the NST, it does not believe the design and flight characteristics of future PGS systems will meet the NST criteria for treaty limited weapons and has no intention of including them in future negotiations.²¹

In contrast to American development of missile defenses and non-nuclear strategic weapons, Russia is beginning a nine year, 20 trillion Russian Ruble military modernization plan that focuses heavily on new strategic nuclear missiles and command and control capabilities.²² This is not entirely surprising as most current Russian ICBMs and SLBMs are quite old and have had their service lives extended, but new systems appear designed with the threat of major nuclear powers and missile defense penetration in mind. For example, in January 2011, Yuri Solomonov, chief civilian designer of Russia's "Topol" and "Yars" ICBMs and the Bulava SLBM, publically stated that Russia has enhanced its newer missiles with "a new nuclear payload" that gives these weapons unique capabilities to penetrate all existing and potential missile defense systems.²³ Solomonov provided few specifics, but he implied that individual warheads might separate from the ICBM much earlier than normal and fly along a non-ballistic trajectory. This would make interception by missile defense systems far more difficult. In his comments about Solomonov's announcement, Russian military expert Viktor Litovkin speculated that Russia's newer missiles may have "glide warheads."²⁴ After dispersal from the ICBM, these warheads fly along a horizontal trajectory rather than on a ballistic arc, a trajectory that enables them to fly under missile defense radars. In a second example, Vladimir Popovkin, First Deputy Minister of Defense (and now Director of Roskosmos) revealed in March 2011 that Russia would develop a new heavy ICBM to replace the RS-20 Voevoda (or "Satan") by 2018.²⁵ The new missile will

carry up to ten independently targeted warheads which will also be able to evade missile defenses. Finally, Russia continues to test the “Bulava,” a six warhead SLBM for a new generation of Russian strategic ballistic missile submarines. These large missiles with multiple warheads and missile defense penetration capabilities are inherently offensive and represent a stark contrast from the direction U.S. force development is currently headed.

Russian modernization will not stop with procurement of new missile technology. In its ongoing extensive military reform effort, the Russian military has developed a new “aerospace defense” command (VKO) to increase Russia’s capability to provide early warning to its nuclear forces and counter U.S. missile defenses. The command, with 70,000 officers at its disposal, will gain control of early warning radars and some space assets along with missile defense, anti-aircraft, and some air force units.²⁶ This is striking given the large-scale reduction in manpower and assets seen in other branches of the armed forces.

Many experts and political leaders have suggested that the U.S. and Russia attempt to include tactical or “non-strategic” nuclear weapons in a new treaty. Currently no agreements cover these weapons and little transparency exists. Tactical nuclear weapons are designed for battlefield use against tactical formations, generally have lower blast yields than strategic weapons, and are delivered at ranges of 300km or less. Examples include nuclear artillery shells, short-range cruise missiles, bombs delivered by fighter aircraft, nuclear mines, and even nuclear tipped air defense missiles. The *Bulletin of Atomic Scientists* estimates that Russia inherited between 15,000 – 21,000 tactical nuclear weapons from the Soviet Union and that it now has between 3,700-

5,400 warheads after a series of force reductions.²⁷ The BAS believes about 2000 of these are deployed forward close to combat units, the rest in reserve. Other sources give differing estimates, a fact that highlights the nature of the transparency problem. Open sources indicate the U.S. retains far fewer with about 200 in Europe as a commitment to NATO.²⁸

As with the other issues, the U.S and Russia have different views on the utility of tactical nuclear weapons and this could make a new agreement limiting these difficult. The NPR admits the U.S maintains a “small number” of weapons in Europe to help maintain “alliance cohesion.”²⁹ However it states the U.S. will increasingly rely on non-nuclear measures to assure allies and partners over time.³⁰

Russia, on the other hand, appears to rely more on its tactical nuclear weapons than ever. One well known Russian defense expert describes tactical nuclear weapons as “compensation” for NATO’s conventional advantages, missile defense plans, and the failure to resolve a longstanding dispute over the Conventional Forces in Europe Treaty.³¹ Vice Admiral Oleg Burtsev, First Deputy Chief of Russia’s Navy, stated that “the future may belong to tactical nuclear weapons” because their range and accuracy are increasing and they can be loaded on existing cruise missiles and submarines.³² Burtsev strongly implied that nuclear tipped cruise missiles will be deployed on Russian submarines in the near future. Finally, the Russian military has incorporated notional use of tactical nuclear weapons into recent major exercises, another hint at the important role they play. This simulated use occurred in Exercise Zapad 2009 in Europe and Vostok 2010 in the Far East.³³ Russia’s official position is that the U.S will need to withdraw its tactical nuclear weapons from Europe back to the Continental

United States before negotiations involving tactical nuclear weapons can even begin. This in turn may prove problematic with some NATO countries and will almost certainly be questioned by conservative U.S. legislators in any treaty ratification process.

Other security related disputes will also impact conclusion of a new treaty. A long running dispute between Russia and the U.S. and its NATO allies over the Conventional Forces in Europe (CFE) Treaty is the most pressing.³⁴ The original 1990 CFE Treaty set limits on the amount of “treaty limited” conventional weapons that NATO and the Warsaw Pact could maintain in various zones in Europe. The treaty was “adapted” in 1999 to accommodate the disappearance of the Warsaw Pact and the expansion of the NATO alliance, but the NATO allies refused to ratify the treaty until Russia complied with new limits in the “flank” zones of the Caucasus and until Russia removed its forces from Georgia and Moldova. From 2002 to 2007, Russia and the allies continued to dispute whether Russia had fulfilled its obligations, and Russia continued to complain about new NATO allies’ failure to accede to the treaty. Finally in December 2007, Russia suspended its implementation of the treaty and indicated it would no longer be bound by its obligations. Despite numerous high level negotiations, the dispute remains unresolved, and Russia’s invasion of Georgia and stationing of forces in Abkhazia and South Ossetia have only complicated the matter.

Failure to resolve this disagreement significantly complicates the nuclear arms control picture. As indicated earlier, Russian military strategists believe NATO holds tremendous conventional and nuclear advantages, an imbalance made more pronounced by the relative weakness of Russia’s conventional forces. Russian policymakers and strategic thinkers all agree that Russian nuclear weapons provide a

means to “rectify the imbalances” in conventional capability.³⁵ This is more than just rhetoric. As noted earlier, Russian doctrine outlines use of nuclear weapons in several scenarios and Russia’s military leaders have notionally used tactical nuclear weapons as part of several recent large-scale conventional force exercises. Failure to solve the CFE dispute will thus make further nuclear arms control reductions even more problematic. Some argue that resolution of the CFE dispute will make Russian reliance on nuclear weapons even stronger; Russia would have to continue to rely on nuclear weapons because CFE would limit the amount of conventional forces available to deter attack from the west.

Arms Control Options for the Future

As the analysis above indicates, conclusion of another traditional bilateral arms control agreement between Russia and the U.S. will prove difficult. This section analyzes approaches to future cooperation given the issues highlighted above. It remains focused on bilateral cooperation; including other nuclear powers in any of these agreements is theoretically possible, but will make them much harder to conclude.

*Option 1: A new bilateral treaty that limits both sides to 1000 operationally deployed strategic and tactical warheads.*³⁶ Some arms control proponents have suggested a new treaty that radically cuts the number of deployed nuclear warheads by setting a combined limit covering both strategic and tactical nuclear weapons. The variant above recommends 1000 warheads for each side. Other proposals offer a different recommended number. Proponents of this view argue it would significantly reduce the risk of nuclear attack on both sides by radically cutting the number of deployed warheads, it would further reduce the risk of possible theft or illegal

proliferation of warheads, and it would stimulate more international support for strengthening other international non-proliferation efforts.

No matter what the number, such an approach has little chance. In the first place, Russian strategists are likely to reject the idea of combining strategic and tactical warheads under a single limit. In current Russian thinking, each weapon addresses different threats. Strategic weapons deter strategic nuclear attack while tactical weapons serve broader purposes, including potential use in conventional operations. A combined limit would force Russian strategists to either give up “too many” tactical warheads to retain enough strategic warheads to deter strategic attack, or give up too many strategic warheads to retain enough tactical warheads to meet various regional contingencies. Second, Russia will certainly insist on U.S. concessions on the development and deployment of both missile defenses and PGS. The extremely low threat of Russian nuclear attack on the U.S. or the threat of illegal proliferation of Russian weapons does not merit such concessions. By contrast, the U.S. needs these capabilities to offset the real threats it and its allies face. Finally, conservatives in the U.S. congress are wary of cooperation on arms control with Russia and very protective of missile defense. Since the U.S. Senate has to ratify any treaty, this approach is a non-starter.

*Option 2: A new bilateral agreement on tactical nuclear weapons in which both sides agree to exchange data, move weapons from operational units to central storage locations, and allow inspections. The U.S. would agree to remove its tactical weapons from Europe. The agreement would thus not limit overall numbers of weapons, only areas of deployment.*³⁷ This option has several advantages. First, it provides each side

with complete and verifiable transparency on the other's tactical nuclear arsenal. Second, it reduces the risk of theft or proliferation by consolidating tactical weapons in fewer, more secure warehouses. Third, such an agreement would show more U.S.-Russian resolve to limit nuclear weapons and thus stimulate more international support for the global non-proliferation regime. Fourth, since missile defenses are not aimed at tactical weapons, the U.S. has a strong case for arguing that talks on such an agreement should have no linkage to missile defense negotiations and be concluded separately.

The Russians might also see other benefits to such an agreement. They would achieve a long-standing goal in getting the U.S. to remove its tactical nuclear weapons from Europe. In addition, this format would allow Russia to keep the number of weapons it thinks it needs to address regional scenarios; it simply consolidates storage in more secure locations. In theory, the agreement can also be written to allow Russia to place these storage locations throughout Eurasia to give the Russian military some flexibility in meeting various regional contingencies if needed.

Despite these advantages, such a treaty would only have political value for the U.S. since Russian tactical weapons pose little real threat to the U.S. or its allies. In addition, such an agreement faces numerous obstacles. In addition to those listed at the beginning of this paper, the U.S. would need to convince its NATO allies that removal of U.S. tactical nuclear weapons from Europe is in the alliance's interest. With some allies, this won't prove difficult. With others it will. The weapons now mainly serve a political rather than military purpose, and future generations of European fighter aircraft may not include nuclear delivery capabilities anyway.³⁸ A decision to remove the

weapons will almost certainly prove popular with NATO publics. At home the Obama Administration will face skepticism from conservative Senators responsible for ratifying any agreement. However, the increased transparency on Russia's tactical nuclear arsenal, its non-proliferation value, and NATO concurrence may make this palatable.

Option 3: Abandon, for now, discussions on a new nuclear weapons agreement. Focus on other nuclear non-proliferation initiatives and on increased cooperation to reduce the threat of other dangerous technologies. Strengthen military to military cooperation in WMD defense and counter-proliferation. As the "analysis of asymmetries" above shows, negotiation, conclusion, and ratification of another traditional agreement in the near future are problematic. So avoid it. The U.S. and Russia have cooperated successfully in other nuclear non-proliferation and "threat reduction" efforts for years and additional work in these areas directly supports the key U.S. objective of strengthening the international non-proliferation regime. For example, the two countries have cooperated to secure and eliminate Soviet era nuclear weapons grade materials and delivery systems under the Nunn-Lugar Cooperative Threat Reduction (CTR) Program since the mid-1990s. Examples of the program's success include deactivation of 7,599 nuclear warheads, destruction of hundreds of ICBMs, SLBMs, and their launchers, and significant upgrades to security at 24 Russian nuclear weapons storage sites.³⁹ A key enabler of this program is a 1992 Bilateral Agreement, the "CTR Umbrella Agreement," which provides legal basis for elements of the U.S. government to work with their Russian counterparts on Russian territory. The agreement provides tax exemption for purchases in Russia made with U.S. government funds, exempts U.S. personnel and contractors from legal liability for accidents that

might occur, provides visas for U.S. experts to visit Russia, and authorizes access to Russian government entities and installations. The agreement also provides legal justification for Russian government entities to develop key “implementing agreements” with the U.S. Department of Defense and Energy for specific programs. The Umbrella Agreement expires in June 2013 unless it’s extended or renegotiated. A serious U.S. government effort to conclude a new agreement is one excellent alternative to another long and bitter arms control negotiation and vital to continued CTR implementation.

In July 2009, the U.S. and Russia also formed a Nuclear Energy and Security Working Group as part of the “Bilateral Presidential Commission” to broaden and deepen cooperation in clean, safe, and secure use of nuclear energy for peaceful purposes. The group has an ambitious agenda and, as U.S. Secretary of Energy Steven Chu has noted, has several successes.⁴⁰ The group worked to facilitate return of 1,590 kilograms of Highly Enriched Uranium (the equivalent of 60 nuclear weapons) and other spent nuclear fuel from several countries to Russia where it could be more safely stored and reprocessed. The two countries also cooperated to accelerate the conversion of several Russian research reactors to “low enriched” fuel from higher weapons grade fuel. Finally, with the 2010 shut down of the Russian Zheleznegorsk reactor, the U.S. and Russia completed shut down of all weapons grade plutonium production reactors. More cooperation under the auspices of this working group would be less controversial than more formal arms control but still advance both U.S. and Russian nuclear non-proliferation interests.

The U.S. and Russia also have the option of exploring cooperation in other “dangerous technologies” such as cyber security. Cyber threats arguably pose

more danger to both Russia and the U.S. presently than nuclear weapons do. Cyber attacks by hackers, terrorists or rogue states could do enormous damage to the financial systems and other critical infrastructure of both nations. Cyber attacks could penetrate the nuclear weapons' command and control systems of either country and make some or all of those forces completely useless for a period of time. Such an event would be extraordinarily destabilizing as the country under computer attack might consider itself vulnerable to a military strike of some sort and be tempted to use whatever nuclear assets it could control in a pre-emptive manner.

Cyber attacks against nuclear command and control systems and other critical national level infrastructure are just one aspect of cyber security. There are numerous others including cyber espionage (not attacks) against both military and economic entities, and simple harassment by hackers. Research and cooperation on approaches to bilateral and multilateral engagement on cyber security is just beginning. As with the nuclear weapons and military technology, the difficulty comes in balancing the need to guard sensitive information about national defensive and offensive capabilities with the legitimate need to stabilize great power security relationships and cooperate against terrorist and criminal elements.

One approach in the short term does not involve formal treaties or arms control agreements, but focuses on bilateral voluntary coordination on the types of legislative, law enforcement, and other domestic measures needed to criminalize certain cyber activities. The approach also involves constant exchanges of information on best practices and relevant threats.⁴¹ These could become as regular as desired and

ultimately develop into more formal mechanisms in which several countries could put diplomatic, economic, and other pressure on outliers to conform.

It appears that Russia and the U.S. are already moving ahead on this path and have been for several years. Howard Schmidt, President Obama's Special Assistant and Cybersecurity Coordinator, released a White House blog entry 12 July 2011 detailing the results of a series of recent U.S.-Russia bilateral meetings.⁴² The two sides entered discussions with the goal of reducing the risk of "misperception and inadvertent crisis." The way ahead will include continued regular exchanges of information on "technical threats to both sides like botnets," views of both militaries on approaches to cyber operations, and utilization of existing U.S.-Russia communications systems (designed for Cold War crisis management) to rapidly exchange information about potential issues.

How far bilateral cooperation in this area can go isn't clear. We may see the same divergence in outlook, doctrine, and even practice on cyber security as seen recently with nuclear weapons. The White House, for example, has published an "International Strategy for Cyber Space" which seeks to achieve international respect for an "open, interoperable, secure, and reliable" information infrastructure" that promotes international commerce, freedom of expression, and security."⁴³ The strategy also emphasizes "norms of behavior" by states that support these principles and the general rule of law. The Russian government, by contrast, is accused of using cyber attacks against Estonia in 2007 and on Georgia in 2008. It's also accused of using denial of service attacks against private Russian media outlets which covered protests against fraudulent elections in Russia in December 2011. The United States should thus enter

such a dialogue with Russia with open eyes and be ready to jettison such cooperation if it undermines U.S. interests.

Conclusion

Negotiation and conclusion of another U.S.-Russia bilateral arms control agreement is problematic. Both countries have vastly different strategic outlooks, doctrinal differences, and strategic weapons programs that will make common ground difficult to find. Politics will also get in the way. Presidential campaigns for 2012 elections will soon get underway in both countries, and both countries have opposition political interests that are skeptical of continued U.S.-Russia cooperation in this area.

Even if the two countries overcome these obstacles, the military value to the United States of another agreement limiting U.S. and Russian nuclear weapons is minimal. Russia's nuclear arsenal is not really a threat at this time; proliferation of nuclear materials and technology to terrorists and rouge states is. The value of an additional U.S.-Russian agreement is primarily political in that it will show U.S. and Russian willingness to continue cooperation in strengthening the global nuclear non-proliferation regime, but it will do little to reduce actual military threats to the United States.

Given the difficulties in negotiating a new agreement, the U.S. and Russia would be better served in extending cooperation in other ongoing nuclear non-proliferation efforts. The work done under the auspices of the Nuclear Energy and Security Working Group of the Bilateral Presidential Commission offers one promising area and the Nunn-Lugar Cooperative Threat Reduction Program offers another. In fact, the highly successful Nunn-Lugar program needs an "Umbrella Agreement" to continue to operate.

Successful negotiation of this agreement is an excellent objective and will also serve to produce political and operational momentum for bilateral non-proliferation efforts.

Other new areas also deserve exploration. As pointed out, cyber security is a significant threat to both sides. Flexible cooperation involving exchange of information and quick notification of impending threats would be helpful. Biological terrorism might prove to be another area of potential combined efforts. The U.S. and Russia have failed over several years to develop meaningful cooperation on biological threats, but rapid change in the biotech industry and the continuing interest terrorist groups in obtaining bioterror technology make revisiting this question worthwhile. In short, there are options; another painful treaty negotiation and ratification isn't necessary.

Endnotes

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